



Hazardous Substances  
Technical Liaisons

## **OFFICE OF RESEARCH AND DEVELOPMENT HAZARDOUS SUBSTANCES TECHNICAL LIAISON REGION 9 NEWSLETTER Winter 2005, Edition 30**

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First off, let me wish everyone a Happy New Year for 2005! Cleanup issues continue to evolve in the hazardous waste remediation world and I hope I have captured the most useful news for you in this quarter's HSTL newsletter. Read on for national and local (Region 9) items of interest. For starters, check out the articles on the use of wind turbine power at a Superfund site, a number of new ETV Program technology verifications and an update on the Superfund Sediment Resource Center.

Finally, let me make you aware of the "ORD Product Expo" being presented in Region 9 on February 8th. The Region will host three ORD speakers for the day covering new products that can assist you. If you are not local, the presentation will be webcasted. See the following webpage for more info: <http://clu-in.org/studio/r9productexpo>.

Before you get too far down into the details, let me remind again that I am here in Region 9 to offer you ORD technical support for your waste cleanup needs. Your local Superfund tech support team is still able and willing, but if you need extra help, please do not hesitate to call on me. I can muster support for you from the EPA labs listed in the table below. This technical support is funded upfront, so take advantage of it. If you are in one of Region 9's waste programs, it's yours to use. Enjoy the newsletter!

Ada, OK Lab  
Cincinnati, OH Lab  
Las Vegas, NV Lab

Subsurface issues, such as groundwater fate and transport modeling  
Engineering issues, such as cleanup technologies  
Site characterization and monitoring, field support, aerial photography

Mike Gill  
EPA Region 9  
ORD Hazardous Substances Technical Liaison  
415-972-3054

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Winter 2005 Edition of the Region 9 HSTL Newsletter:

National News

New Tools and Technologies

Two New ORD Centers Established at End of 2004

Information on the Superfund Sediment Resource Center (SSRC)

Local News

Tech Support Project Meeting Summary (Sacramento, CA)

Datebook - Upcoming Events

Web Pages

Hazardous Substances Research Centers

National Institutes of Environmental Health Sciences "SBRP"

New Web Site Pinpoints Harmful Chemicals in Communities

PPCPs - Pharmaceuticals and Personal Care Products

Recent Documents, Databases, etc.

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## NATIONAL NEWS

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New Tools and Technologies

Wind Turbine Powers Groundwater Circulation Well

From Technology News and Trends (Sept 2004)

Initial findings from a study conducted by the University of Missouri-Rolla (UMR) show that wind turbines provide technically effective and cost-efficient power for small remediation systems such as ground-water circulation wells (GCWs). Demonstration of this technology is underway at the former Nebraska Ordnance Plant Superfund site near Mead, NE. Analysis of data collected over the first five months of operation indicates that the technology is generating more energy than consumed by principal components of the GCW. The wind turbine operates in a utility grid "inter-tie" mode, whereby both utility and wind energy are used when wind energy is insufficient. When excess wind energy is produced, the surplus returns to the utility grid for other consumer use.

For the full article, see the following webpage: <http://clu-in.org/download/newsletters/tnandt0904.pdf>

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### ETV Reports

These are technologies that have recently been verified by EPA's Environmental Technology Verification (ETV) Program.

#### CHLORINE DIOXIDE DECONTAMINATION TECHNOLOGY VERIFIED

<http://www.epa.gov/etv/verifications/vcenter11-3.html>

#### COAGULATION AND FILTRATION TECHNOLOGY FOR ARSENIC REMOVAL VERIFIED

<http://www.epa.gov/etv/verifications/vcenter2-12.html>

#### ION MOBILITY SPECTROMETER VERIFIED

<http://www.epa.gov/etv/verifications/vcenter12-1.html>

#### REVERSE OSMOSIS TECHNOLOGY FOR ARSENIC REMOVAL VERIFIED

<http://www.epa.gov/etv/verifications/vcenter2-1.html>

#### SURFACE ACOUSTIC WAVE DETECTOR VERIFIED

<http://www.epa.gov/etv/verifications/vcenter12-2.html>

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### Two New ORD Centers Established at End of 2004

(Edited from EPA R&D News)

EPA established a permanent National Homeland Security Research Center and a National Center for Computational Toxicology in November 2004. While there are no formal "technical support centers" at these new ORD centers, if you need assistance in finding out how they can help you in your Regional work, please get in touch with me (Mike Gill - 415-972-3054).

The National Homeland Security Research Center is based in Cincinnati, Ohio and has been restructured from the original temporary charter into three divisions: threat and consequence assessment, decontamination and consequence management and water infrastructure protection. With the permanent center, EPA will ensure effective design, implementation and oversight of the research and provide clear lines of communication and facilitate interaction within EPA and with other federal agencies, universities, and private sector and research partners. The permanent staff of the center will increase to 50 scientists, engineers and support personnel located in EPA facilities in Cincinnati, Ohio, Research Triangle Park, N.C. and Washington, D.C. For more information on the NHSRC, visit the internet at: <http://www.epa.gov/nhsrc> .

In addition, the EPA National Center for Computational Toxicology was established in November. The Center will advance the science needed to more quickly and efficiently evaluate the potential risk of chemicals to human health and the environment. The Center will coordinate and implement EPA's research on computational toxicology to provide tools to conduct more rapid risk assessments and improve the identification of chemicals for testing that may be of greatest risk. More information about EPA's computational toxicology program is available at: <http://www.epa.gov/comptox> .

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### Information on the Superfund Sediment Resource Center (SSRC)

(From Kelly Madalinski of OSRTI)

The goal of the SSRC, created in early 2004, is to provide additional support for site-specific technical issues at contaminated sediment sites. It is primarily designed to provide timely reviews of draft technical work products prepared by EPA, responsible parties, states, and federal facilities. The SSRC offers "free" technical assistance and makes available the appropriate experts (within and outside the federal government).

Topics of focus for review and comment include site characterization (e.g., data collection and evaluation, sediment stability); modeling (e.g., hydrodynamic, contaminant fate and transport, food chain); ecological and human health risks; and evaluation, design, implementation, and monitoring of remedies such as capping, dredging, monitored natural recovery (MNR), and treatment technologies.

The level of effort for most requests is expected to be roughly 40 hours with a turn-around time of less than 30 days. More information on the SSRC can found at <http://www.epa.gov/superfund/resources/sediment/ssrc.htm> .

Requests can be submitted via email at [sedimentsolutions@ttemi.com](mailto:sedimentsolutions@ttemi.com) or by telephone at **703-390-0698**.

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# LOCAL NEWS

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## Tech Support Project Meeting Summary (Sacramento, CA)

This meeting, held in Sacramento, CA at the end of October, 2004, was attended by technical support staff from both the Regions and the ORD Labs, as well as some States. The site, Sacramento, was chosen because of its connection to the conference topic, "Emerging Contaminants". The attendees heard a number of presentations about perchlorate, 1,4-dioxane and NDMA, all contaminants that have become national in scope in recent years. The group visited the Aerojet site in Rancho Cordova and the former McClellan Air Force Base in Sacramento, which closed during BRAC downsizing in the 1990's. The meeting offered the national audience a chance to hear about these emerging issues and provided them with perspectives that they can hopefully use at their sites. Proceedings can be found at the following website: <http://www.epa.gov/tio/tsp/meetings.htm> . Presentations included the following:

- Assessing Perchlorate Exposure: Occurrence in Large Geographical Areas and Uptake in Mammals  
(Todd Anderson, The Institute of Environmental and Human Health, Texas Tech University)
- Use of Novel Analytical Techniques for Detecting Perchlorate and RDX Degradation Products in Groundwater  
(Harry Beller, Ph.D., Lawrence Livermore National Lab)
- Incorporating Evolving Science in Program Practice  
(David Cooper, U.S. EPA)
- Emerging Concerns Over NDMA in Groundwater: An Overview of NDMA Sources, Formation, Transport and Treatment  
(Rula A. Deeb, Malcolm Pirnie, Inc.; Elisabeth Hawley; David Sedlak; Michael Kavanaugh)
- Perchlorate Treatment at the Goodyear Wastewater Treatment Plant (GWWTP)  
(Laurie LaPat-Polasko, Ph.D, Geomatrix Consultants)
- Remedial Strategy for Perchlorate-bearing Commingled Plumes at an Explosives Test Facility  
(Vic Madrid, Lawrence Livermore National Laboratory)
- ITRC Perchlorate Team  
(Mark Malinowski, California Department of Toxic Substances Control)

- Perchlorate  
(Kevin Mayer, U.S. EPA Region 9)
- Assessing Hydraulic Capture through Combined Analytic Elements and Interpolation  
(Matthew Tonkin, S. S. Papadopoulos & Associates, Inc.; Chris Muffels, University of Queensland, Australia)
- Results of an Extensive Passive Diffusion Bag Sampler Demonstration  
(John Tunks, Parsons)

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## DATEBOOK - UPCOMING EVENTS

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This section of the newsletter is an attempt to present both EPA and non-EPA sponsored environmental technology related courses and conferences. But being a quarterly publication, it is impossible for this newsletter to always be up-to-date. For the most pertinent information on upcoming EPA courses, see <http://www.trainex.org>. These events are listed chronologically.

Many of the entries in these newsletters are from TIO's "TechDirect" emails (thanks to Jeff Heimerman!). TechDirect prefers to concentrate mainly on new documents and the internet live events. However, they do support an area on the CLU-IN webpage where announcement of conferences and courses can be regularly posted. Sponsors can input information on their events at <http://clu-in.org/courses>. Likewise, the page has an area for upcoming events that might be of interest. It allows users to search events by location, topic, time period, etc.

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### **ITRC Internet Based Training**

These are typically 1-2 hour online courses where the participant follows a webpage presentation, while listening on the phone. Check - <http://www.itrcweb.org> or <http://www.clu-in.org/studio/seminar.cfm> for times and registration.

*NOTE: All dates/times are subject to change – check <http://www.itrcweb.org> for the most up-to-date information.*

Jan 25 - Geophysical Prove Out

Jan 27 - Constructed Wetlands

Feb 3 - Guidance for Characterization, Design Construction, and Monitoring of Mitigation Wetlands  
Feb 10 - TRIAD Approach

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The International Conference on Environmental Science and Technology sponsored by the American Academy of Sciences  
January 23-26, 2005  
New Orleans, LA  
<http://www.aasci.org/conference/index.html>

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The Third International Battelle Conference on Remediation of Contaminated Sediments  
January 24-27, 2005  
New Orleans, LA  
<http://www.battelle.org/environment/er/conferences/sedimentscon/default.stm>

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National EPA-Tribal Science Council Workshop: *Addressing Tribal Traditional Lifeways in EPA's Risk Assessment Policies and Procedures*  
Sparks, Nevada  
January 25-27, 2005  
<http://www.epa.gov/osp/tribes/announce/workshop.htm>

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EIMS - "Environmental Information Management Systems"  
January 26, 2005  
San Jose, California  
Program Agenda - <http://www.grac.org/EIMSagenda>  
Registration Forms - <http://www.grac.org/EIMSreg>  
Exhibitor & Co-Sponsor Forms - <http://www.grac.org/EIMSSponsor>

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Representation of Dose-Response Relationships for Chemicals Associated with Non-Cancer Effects and Their Policy Implications  
January 27-28, 2005  
Oakland, CA  
[http://www-apps.niehs.nih.gov/sbrp/products/products3\\_s1.cfm](http://www-apps.niehs.nih.gov/sbrp/products/products3_s1.cfm)

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A Systematic Approach to Capture Zone Analysis

February 3, 2005  
EPA Region IX, San Francisco, CA  
Call Herb Levine for information (415-972-3062)

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ORD Product Expo in Region 9  
February 8, 2005  
San Francisco, CA (Also Online)  
<http://clu-in.org/studio/r9productexpo>

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RTDF: NON-AQUEOUS PHASE LIQUID (NAPL) CLEANUP ALLIANCE  
February 14-15, 2005  
San Diego, CA  
Call Bob Maxey at 703-308-7273

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The American Water Works Association / Water Environment Federation Joint Management Conference  
February 27-March 2, 2005  
Atlanta, GA  
<http://www.awwa.org/conferences/jmc/>

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Nanotech and the Environment (part of larger conference)  
March 13-17, 2005  
San Diego, CA  
[http://www.chemistry.org/portal/a/c/s/1/acsdisplay.html?DOC=meetings\sandiego2005\sa05\\_index.html](http://www.chemistry.org/portal/a/c/s/1/acsdisplay.html?DOC=meetings\sandiego2005\sa05_index.html)

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15TH WEST COAST CONFERENCE ON SOILS, SEDIMENTS AND WATER  
March 14-17, 2005  
San Diego, CA  
<http://www.aehs.com/conferences/westcoast/>

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National Superfund Radiation Meeting  
Mar 14-18, 2005  
New Orleans, LA



Contact: Robin Anderson (703) 603-8747

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ATSWMO Brownfields Symposium

March 15-17, 2005

New Orleans, LA

Contact: Jennifer Wilbur (202) 566-2756

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UST/LUST National Conference

March 14-16, 2005

Seattle, WA

<http://www.neiwpcc.org/ustlustconf.htm>

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Long-Term (Groundwater) Monitoring Optimization Seminar

March 30-31, 2005

Sacramento, CA

<http://trainex.org/classdetails.cfm?classid=2402&courseid=379>

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Environmental Industry Summit 2005

March 30 - April 1, 2005

San Diego, CA

<http://www.ebiusa.com/summit>

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Engineering Sustainability 2005

April 10-12 2005

Pittsburgh, PA

<http://www.engr.pitt.edu/msi/conference.html>

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International Phytotechnologies Conference

April 20-22, 2005

Atlanta GA

<http://www.cluin.org/phytoconf>

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National Corrective Action Conference

May 3-4, 2005

Denver, CO

<http://www.nationalcaconf.com/>

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The EnviroExpo and Conference 2005

May 3-4, 2005

Boston, MA

<http://events.zweigwhite.com/enviroexpo2005/>

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2005 NSTI Nanotechnology Conference and Trade Show

May 8-12, 2005

Anaheim, CA

<http://www.nsti.org/Nanotech2005/>

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The 2005 International Oil Spill Conference

May 15-19, 2005

Miami, FL

<http://www.iosc.org/>

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EPA NARPM / TSP Conference

May 23-27, 2005

Phoenix, AZ

<http://www.trainex.org/>

Contact: Matt Charsky (703) 603-8777 or Gary Turner at (703) 603-9902....website????

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Annual World Water & Environmental Congress: "Impacts of Climate Change"

May 15-19, 2005

Anchorage, AK

<http://www.asce.org/conferences/ewri2005>

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EPA Science Forum  
May 16-18, 2005  
Washington, DC  
<http://www.epa.gov/ord/scienceforum>

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NGWA Conference on MtBE and Perchlorate: Assessment, Remediation, and Public Policy  
May 26-27, 2005  
San Francisco, CA  
<http://info.ngwa.org/servicecenter/Meetings/MeetingDetail.cfm?meetingid=578&feecatuid=1792&datecatuid=973>

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8th International Symposium on In-Situ and On-Site Bioremediation  
June 6-9, 2005  
Baltimore, MD  
<http://www.battelle.org/environment/er/conferences/biosymp/default.stm>

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International conference ModelCARE2005: "Calibration and Reliability in Groundwater Modelling, From Uncertainty to Decision Making"  
June 6-9, 2005  
The Hague (Scheveningen), Netherlands  
<http://modelcare2005.nitg.tno.nl/>

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Dioxin 2005 Conference  
August 21-26, 2005  
Toronto, Canada  
<http://www.dioxin2005.org/>

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Watershed Management Conference, "Managing Watersheds for Human and Natural Impacts: Engineering, Ecological, and Economic Challenges."  
July 19-22, 2005  
Williamsburg, VA  
<http://www.asce.org/conferences/watershedmanagement2005/>

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10th Annual International Symposium on the Interactions between Sediment and Water and the International Association for Sediment Water Science

August 28-September 2, 2005

Lake Bled, Slovenia

<http://www.wsc.monash.edu.au/iasws/2005symposium.htm>

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Western Regional Pollution Prevention Network (WRPPN) Annual Conference

September, 28-30, 2005

Granlibakken, Tahoe City, CA

<http://www.wrppn.org/>

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ENVIRONMENTAL EXPOSURE & HEALTH 2005

October 5-7, 2005

Atlanta, GA

<http://www.wessex.ac.uk/conferences/2005/index.html>

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2005 Brownfields Conference

November 2005

Denver, CO

<http://www.brownfields2004.org/en/index.aspx>

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## WEB PAGES

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Web sites to be featured this quarter include information from two EPA-funded research programs, the Hazardous Substances Research Centers (HSRCs) and the NIEHS Superfund Basic Research Program (SBRP). Briefly, both are EPA funded university-based research programs that conduct research on Superfund related issues, such as toxicology or cleanup topics. The sections below show recent reports from the two programs.

## Hazardous Substances Research Centers

### **Two New Research Briefs on Anaerobic Reductive Dechlorination Available**

These short web articles describe Center research on anaerobic reductive dechlorination of TCE and PCE. The process shows potential for in situ treatment of contaminant source zones. Research Brief #4 ([http://www.wrsrc.orst.edu/briefs/brief\\_4.htm](http://www.wrsrc.orst.edu/briefs/brief_4.htm)) describes studies to define the kinetics and inhibition of the dechlorination reactions and Research Brief #5 ([http://www.wrsrc.orst.edu/briefs/brief\\_5.htm](http://www.wrsrc.orst.edu/briefs/brief_5.htm)) describes efforts to develop "push-pull" tests to monitor bioaugmentation with reductive dechlorinating cultures.

### **New Research Brief on Chemical Delivery and Aquifer Mixing Available**

This short web article describes research by the Western Region Hazardous Substance Research Center (HSRC) on technologies that promote aquifer mixing. Research Brief #6 ([http://www.wrsrc.orst.edu/briefs/brief\\_6.htm](http://www.wrsrc.orst.edu/briefs/brief_6.htm)) describes studies by Peter Kitanidis and his research team at Stanford University to develop computer models that help practitioners visualize aquifer conditions and design treatment systems that enhance aquifer mixing. The article contains links to downloadable modeling tools.

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## National Institutes of Environmental Health Sciences "SBRP"

### **Novel Applications of Microbially-Produced Surfactants**

Diverse groups of bacteria and fungi produce surfactants, generally to increase the bioavailability of carbon sources or to aid in attachment/detachment to surfaces. These biosurfactants are amphiphilic molecules with a polar, hydrophilic "head" group and a nonpolar, hydrophobic "tail" group. Biosurfactants represent potential tools for a wide variety of environmental, biotechnological, and industrial applications. Dr. Raina Maier at the University of Arizona SBRP heads a research program exploring potential uses for biosurfactants, a class of compounds that have several potential advantages over their synthetic relatives. For the full article, see: [http://www-apps.niehs.nih.gov/sbrp/researchbriefs/view.cfm?Brief\\_ID=119](http://www-apps.niehs.nih.gov/sbrp/researchbriefs/view.cfm?Brief_ID=119)

### **Arsenic Exposure via Drinking Water and Children's Intellectual Function**

In addition to the well-documented relationships between arsenic exposure and lung, skin and bladder cancers, recent research has linked arsenic exposure to the development of cardiovascular diseases such as hypertension. Researchers have also documented adverse impacts of acute and chronic arsenic exposure on a range of cognitive functions in adults, including learning, memory, and concentration, as well as peripheral and central neuropathies. Funded in part by the SBRP, Dr. Joseph Graziano, program director of the Columbia University SBRP, is investigating whether arsenic exposure via drinking water is associated with diminished intellectual function in children. For the full article, see: [http://www-apps.niehs.nih.gov/sbrp/researchbriefs/view.cfm?Brief\\_ID=120](http://www-apps.niehs.nih.gov/sbrp/researchbriefs/view.cfm?Brief_ID=120)

### **Impacts of Low-Level Benzene Exposure**

Benzene is a ubiquitous environmental contaminant. It has been found at over half of the National Priorities List sites identified by the Environmental Protection Agency, and we are all routinely exposed to benzene via second-hand cigarette smoke, automobile emissions and gasoline vapors. While it is well documented that long-term exposure to high levels of benzene reduces white blood cell counts and can cause leukemia in people, the impacts of exposure at levels below 1 ppm in the air are uncertain. Dr. Martyn Smith, Program Director of the University of California-Berkeley SBRP, and Dr. Stephen Rappaport, of the University of North Carolina-Chapel Hill SBRP, are collaborating with researchers from the National Cancer Institute and the Chinese Center for Disease Control to study the impacts of long-term exposure to low levels of benzene. For the full article, see: [http://www-apps.niehs.nih.gov/sbrp/researchbriefs/view.cfm?Brief\\_ID=121](http://www-apps.niehs.nih.gov/sbrp/researchbriefs/view.cfm?Brief_ID=121)

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### New Web Site Pinpoints Harmful Chemicals in Communities

(From National Institutes of Health)

The National Library of Medicine (NLM), a part of the National Institutes of Health, has announced an interactive Web site that shows (on maps) the amount and location of certain toxic chemicals released into the environment in the United States. The site, called TOXMAP, is free and no registration is required. The Web address is <http://toxmap.nlm.nih.gov>.

TOXMAP focuses on the geographic distribution of chemical releases, their relative amounts, and their trends over time. This release data comes from industrial facilities around the United States, as reported annually to the EPA. TOXMAP also links to NLM's extensive collection of toxicology and environmental health references, as well as to a rich resource of data on hazardous chemical substances in its TOXNET databases (<http://toxnet.nlm.nih.gov/>). There are also fact sheets and summaries about the various chemicals, written by the Agency for Toxic Substances and Disease Registry.

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### PPCPs - Pharmaceuticals and Personal Care Products

(Thanks to Dr. Christian Daughton of the Las Vegas Lab)

PPCPs are not items that one typically associates with hazardous waste sites. But the truth is, they are just as pervasive and unfortunately they can impact the same water resources that industrial sites do when hazardous waste is released. To help you become acquainted with this issue, there is some expanded and updated content on the EPA's web site devoted to pharmaceuticals and personal care products (PPCPs) as environmental pollutants. A wide spectrum of new materials has been added since June of 2004 to most of the main pages that are accessible from the left margin of the PPCPs home page at: <http://epa.gov/nerlesd1/chemistry/pharma> .

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## RECENT DOCUMENTS, DATABASES, ETC.

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These entries are arranged alphabetically. Thanks to TechDirect, Tech Trends, NRMRL News, the ETV Program, DOE, DoD and others for posting their latest documents. And remember, many of these are available in paper format in the Region 9 library. Use your local library.....

Cleaning Up the Nation's Waste Sites: Markets and Technology Trends - 2004 Edition  
(EPA 542-R-04-015)

<http://clu-in.org/download/market/2004market.pdf>

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Communication on Contaminated Land  
(December 2004)

<http://www.nicole.org/news/news.asp?Listing=1>

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A Compendium of Chemical, Physical and Biological Methods for Assessing and Monitoring the Remediation of Contaminated Sediment Sites  
EPA/600/R-03/108, April, 2004

<http://www.epa.gov/nerleerd/methman.htm>

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Demonstration of Two Long-Term Groundwater Monitoring Optimization Approaches  
(EPA 542-R04-001a)

(November 2004)

(63 pages - summary document)

(763 pages - full report with appendices)

<http://clu-in.org/download/char/542-r-04-001a.pdf> (without appendices - 1.4MB)

<http://clu-in.org/download/char/542-r-04-001b.pdf> (with appendices - 10MB)

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Dioxin 2004 Conference (Berlin, Germany) Conference Proceedings  
(Organohalogen Compounds, Volume 66, consisting of more than 2000 pages)

<http://www.dioxin2004.org/>

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"The DNAPL Remediation Challenge: Is There a Case for Source Depletion?"

EPA/600/R-03/143. 2003.

<http://www.epa.gov/ada/pubs/reports.html>

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DNAPL Remediation: Selected Projects Approaching Regulatory Closure

(EPA 542-R-04-016)

(November 2004, 34 pages)

<http://clu-in.org/download/remed/542r04016.pdf>

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Emerging Technologies for the In Situ Remediation of PCB-Contaminated Soils and Sediments:

Bioremediation and Nanoscale Zero-Valent Iron

(August 2004, 30 pages)

[http://clu-in.org/download/studentpapers/bio\\_of\\_pcbs\\_paper.pdf](http://clu-in.org/download/studentpapers/bio_of_pcbs_paper.pdf)

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ESTCP Cost and Performance Report:

Man Portable for the Multi-Sensor Towed Array Detection System (UX 9811)

(June 2004, 85 pages)

<http://www.estcp.org/documents/techdocs/UX-9811.pdf>

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Frequency and Extent of Dispenser Releases at Underground Storage Tank Facilities in South Carolina

(EPA-510-R-04-004)

(September 2004, 32 pages)

<http://www.epa.gov/swrust1/pubs/dispenser.pdf>

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"The Maturing of the Triad Approach: Avoiding Misconceptions"

AU: Crumbling, DM; Hayworth, JS; Call, BA; Davis, WM; Howe, R; Miller, DS; Johnson, R

JN: Remediation

PD: 2004

VO: 14

NO: 4

PG: 81-96



PB: JOHN WILEY & SONS, INC.

IS: 1051-5658

URL: <http://www.ingenta.com/isis/searching/Expand/ingenta?unc=1044759543>

Click on the URL to access the article or to link to other issues of the publication.

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"Performance Monitoring of MNA Remedies for VOCs in Ground Water"

Pope, Daniel F., Steven D. Acree, Herbert Levine, Stephen Mangion, Jeffrey van Ee, Kelly Hurt, and Barbara Wilson

EPA/600/R-04/027. 2004

<http://www.epa.gov/ada/pubs/reports.html>

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Pilot Project to Optimize Ground Water Remediation Systems at RCRA Corrective Action Facilities: Summary Report and Lessons Learned

(EPA 542-R-04-018)

(September 2004, 26 pages)

[http://clu-in.org/download/remed/hyopt/application/rses/rcra/rses/final\\_rcra\\_summary\\_report\\_093004\\_revised.pdf](http://clu-in.org/download/remed/hyopt/application/rses/rcra/rses/final_rcra_summary_report_093004_revised.pdf)

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Pilot Project to Optimize Pump and Treat Systems at State-Funded Leaking Underground Storage Tank Sites: Summary Report and lessons Learned

(EPA 542-R-04-019)

(September 2004, 22 pages)

[http://clu-in.org/download/remed/hyopt/application/rses/ust/rses/ust\\_rse\\_summary\\_report\\_093004\\_resubmitted.pdf](http://clu-in.org/download/remed/hyopt/application/rses/ust/rses/ust_rse_summary_report_093004_resubmitted.pdf)

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Phytoremediation Field Studies Database for Chlorinated Solvents, Pesticides, Explosives, and Metals

(August 2004, 168 pages)

<http://clu-in.org/download/studentpapers/hoffnagle-phytoremediation.pdf>

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Radionuclide Biological Remediation Resource Guide

(EPA 905-B-04-001)

(August 2004, 68 pages)

<http://clu-in.org/download/remed/905b04001.pdf>

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RCRA in Focus: Construction, Demolition, Renovation

(EPA 530-K-04-005)

(September 2004, 24 pages)

<http://www.epa.gov/epaoswer/hazwaste/id/infocus/rif-c&d.pdf>

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Remediation Process Optimization:

Identifying Opportunities for Enhanced and More Efficient Site Remediation (RPO-1).

(September 2004, 156 pages)

<http://www.itrcweb.org/RPO-1.pdf>

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Strategy to Ensure Institutional Control Implementation at Superfund Sites

(OSWER Dir. 9355.0-106)

(September 2004, 17 pages)

<http://www.epa.gov/superfund/action/ic/icstrategy.pdf>

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State Approaches for Drycleaner Remediation Programs

(October 2004)

<http://www.drycleancoalition.org/docs/components/>

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Technology News and Trends September Issue

(EPA 542-N-04-005)

September 2004

<http://clu-in.org/download/newsletters/tnandt0904.pdf>

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Technology News and Trends December Issue

(EPA 542-N-04-006)

(December 2004, 6 pages)

<http://clu-in.org/download/newsletters/tnandt1204.pdf>

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2004 U.S. EPA/NGWA Fractured Rock Conference:

State of the Science and Measuring Success in Remediation

September 13-15, 2004

Proceedings on CD ROM are available by calling 1-800-551-7379

Abstracts and/or papers for each presentation can be downloaded individually at  
<http://clu-in.org/products/siteprof/2004fracrockconf/start.pdf>

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### Disclaimer

This quarterly newsletter publication is meant to be used for information only. It does not represent the opinion of the management of the regional or national offices of EPA, only that of the author. The accuracy of the information contained herein is not guaranteed, only desired. If corrections are necessary, please contact the author. Thanks again to all of my information resources, which include EPA's OSRTI (formerly TIO), ORD (including NRMRL News) and Region 1's CEIT.

Thanks for reading it! Comments and suggestions are appreciated. If you wish to be added to or deleted from this list, please send me an email. (gill.michael@epa.gov)

Newsletter archives can be found on the EPA intranet site.....<http://intranet.epa.gov/ospintra/cp/hstlnews.htm>  
A number of environmental technology web resources can be found here.....<http://www.epa.gov/region09/waste/techlinks/>

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